        THE PURPOSE OF THIS PROJECT IS TO COLLECT INFORMATION
CONCERNING THE STATUS OF PSYCHOLOGICAL RESEARCH RELATED TO
VOCATIONAL EDUCATION, ORGANIZE THE INFORMATION TO PROVIDE
GUIDANCE AND STIMULATION FOR DEVELOPING AND EXECUTING
RESEARCH TO FILL CURRENT GAPS, COOPERATE WITH OTHER
DISCIPLINES IN DEVELOPING RESEARCH PROPOSALS, AND PROPOSE AND
DEVELOP METHODS BY WHICH PSYCHOLOGISTS CAN CONTRIBUTE TO
RESEARCH IN VOCATIONAL AND TECHNICAL EDUCATION. FROM A SEARCH
OF THE LITERATURE, SEVEN CATEGORIES OF RESEARCH HAVE BEEN
IDENTIFIED--(1) ACADEMIC ACHIEVEMENT, (2) COUNSELING,
INCLUDING TECHNIQUES AND USE OF TESTS, (3) DEMOGRAPHIC
CHARACTERISTICS OF STUDENTS, EMPHASIZING CHARACTERISTICS OF
RURAL STUDENTS AND IMPLICATIONS FOR EDUCATION, (4) TEACHING
METHODS, (5) OCCUPATIONAL CHOICE, INCLUDING THE PROCESS OF
VOCATIONAL DEVELOPMENT AND FACTORS INFLUENCING CHOICE OF A
SPECIFIC OCCUPATION, (6) SCHOOL ENVIRONMENT, EMPHASIZING
VARIABLES WITHIN THE SCHOOL SETTING THAT INFLUENCE STUDENT
GOALS AND PERFORMANCE, AND (7) STUDENT CHARACTERISTICS,
INCLUDING ASPIRATION LEVEL, INTERESTS, AND ABILITIES.
RESEARCH CONCERNING STUDENT ASPIRATION LEVEL AND VOCATIONAL
INTERESTS IS SUMMARIZED AND ITS IMPLICATIONS FOR TEACHING AND
RESEARCH IN VOCATIONAL AND TECHNICAL EDUCATION IS DISCUSSED.
THE FINAL REPORT WILL CONTAIN SUMMARIES IN THE OTHER FIVE
AREAS AND WILL RECOMMEND STUDIES WHICH CAN AND SHOULD BE
UNDERTAKEN BY PSYCHOLOGISTS. A LIST OF 69 REFERENCES IS
INCLUDED. THIS REPORT APPEARS IN "APPENDIX OF FINAL RESEARCH
REPORTS FOR PROJECT IN RESEARCH AND DEVELOPMENT IN VOCATIONAL
AND TECHNICAL EDUCATION, NON-METROPOLITAN AREAS" (ED 011 069)
WHICH SUPPLEMENTS VT 001 546. (JM)

THE POTENTIAL CONTRIBUTION OF PSYCHOLOGY TO INTERDISCIPLINARY RESEARCH IN VOCATIONAL-TECHNICAL EDUCATION

Project No. 6
Contract No. O. E. 5-85-108

Edwin C. Lewis
Mary Heiserman

November 1966

Ames, Iowa
50010

I. INTRODUCTION

A. Problem

Recent advances in psychology have produced concepts and information that are proving of considerable value to education. After a period during which psychologists neglected the field of education in favor of laboratory research, they are becoming aware of the needs and implications of their work for education. As a result, the educational implications of psychological research are being stressed with increasing frequency, and research being conducted by psychologists more often is done with educational needs in mind.

For the most part, however, this interest has been focused on traditional academic education, with less concern for other forms as exemplified in vocational and technical education. We believe that the Iowa State University Department of Psychology, by virtue of its strong basic research orientation and its position within a university with strong vocational and technical concerns, is in a unique position to make this needed contribution. Specifically, we intend to explore the current developments in psychology that have educational implications and to develop means by which these can be directly related to the needs of vocational and technical education. Where gaps are found, research will be conducted to fill these gaps, within the competencies and interests of the professional staff members of the Department of Psychology.

B. Objectives

1. To collect information concerning the current status of research and knowledge derived from the application of psychological principles and methodology to the study of educational problems.

2. To organize this information so as to provide guidance for persons engaged in vocational and technical education and to stimulate the development and execution of research projects to fill current gaps in knowledge.

3. To work closely with the members of the Iowa State University Department of Psychology, as well as with persons with related interests in other departments, to inform them as to current research needs in vocational and technical education to which psychologists might contribute, and to aid them in the development and execution of research proposals related to these needs.

4. To propose and develop methods by which psychologists, both at Iowa State and elsewhere, can make substantial contributions to research in vocational and technical education.

II. METHOD

This project has been underway for only about six months, and our results are therefore limited. Our first step, which has occupied most of our time thus far, has been a comprehensive survey of the psychological literature to locate research studies which have potential implications for vocational-technical education. We have relied primarily on the Psychological Abstracts for this survey, although we have included other sources too.

On the basis of the preliminary survey, the studies are arranged into areas which appear to have special importance for vocational and technical education. Each category is considered in detail, with the studies relevant to each category described and related to each other. From these descriptions, we hope to arrive at general conclusions concerning those areas in which research evidence is lacking and in which important contributions can be made by psychologists. Finally, we intend to design specific research projects aimed at closing these gaps.

III. RESULTS

The preliminary survey of the literature has been completed, with the possibility of later additions, and we have developed categories of research areas. We have concentrated thus far on those categories that seem to have direct implications for vocational-technical education, and we are in the process of summarizing the research literature in those categories, with emphasis on the implications for vocational-technical education and the gaps which might be filled by further research. The categories that we are analyzing include:

I. Academic achievement.

II. Counseling (including both counseling techniques and the use of tests).

III. Demographic characteristics of students (with emphasis on the characteristics of rural students and the implications for education).

IV. Teaching methods as they relate to students in vocational and technical programs.

V.   Occupational choice (including the process of vocational development and factors influencing the choice of a specific occupation).

VI.   School environment (variables within the school setting that influence student goals and performance).

VII.   Student characteristics (including aspiration level, interests, and abilities).

Our time has been limited, and we are not close to the completion of this phase of the project. We have, however, drafted a preliminary report summarizing the research in the area of student characteristics as related to educational and vocational performance. Although not in its final form, this summary should serve as a representation of the form of the final report, which will cover research in all areas listed and will also recommend research studies which can and should be undertaken by psychologists.

IV. DISCUSSION

A.   Student Characteristics

Level of aspiration. Psychological research dealing with the aspiration level of high school students is fairly extensive and may be considered from several standpoints. A few studies deal directly with the influence of the high school upon aspiration level; other articles are more generally concerned with the effect of success and failure on performance. Much of this literature also deals with the possible effects of socio-economic class, family influence, place of residence, and race upon occupational aspiration. Still other studies stress attitudes and personality factors, including the student's personal expectations, needs, and interests.

Studies dealing rather directly with the influence of the high school on student aspirations are exemplified by a survey of studies by Boyle (12), who concludes that the type or kind of school attended influences aspirations and that these goals are related also to variations in educational standards and kind of peer-groups likely to exist in a given type of school. Researchers such as Rosenfeld and Zander (49) point out that the teacher is an influential person in suggesting student aspiration and that students tend to accept teacher suggestions when they are rewarded, but tend to ignore or oppose teacher desires when indiscriminate coercion is perceived. These authors believe that these tendencies affect the degree to which students set their aspired grades congruent with their per- ceived capacities. In this same study, teacher disapproval of inadequate performance seemed to have no effect on aspirations,

but teacher disapproval of a good (at level of capacity) performance seemed to have a negative effect.

In his study of the level of aspiration of academically successful and unsuccessful high school students, Byers (13) concluded that both past and current experiences with academic tasks is related to goal-setting patterns of students in the actual classroom situation. However, Byers believes that past experience operates only until subjects gain experience in the current task. According to this study, failure seemed more closely associated with high and unrealistic goal-setting than did success experiences, which seemed closely related to realistic goal-setting. Hilgard (29) also considered school success in relation to level of aspiration and he, like Rosenfeld and Zander (49), stressed the educator as an influential person in helping to keep student goals realistic and attainable and in reducing social pressure. Hilgard writes that individually suitable, though relatively low-level, goals must be dignified and respected. An investigation by Bochow (9) found aspiration level relating, not only to the school situation or sequence of events, but also to individual goals, differences, and conflicts arising from high levels of aspiration.

Several aspiration-level studies have dealt with the more general aspect of the effect of success and failure on performance and with the influence upon student goals or ambitions of factors such as need for achievement (n Ach), fear of failure, reaction to frustration or anxiety, and ability. Investigators concerned with effects of success and failure on aspirations via n Ach or motivation include Feather (18, 19), Tureck and Howell (63), Dani (16), and Moulton (47). Feather's study (18) on level of aspiration and achievement imagery attempts to bring together aspiration studies and McClelland's (42) studies of achievement motivation by investigating the relationship between relaxed and achievement-oriented situations. Mean goal discrepancy scores showed a significant increase from Relaxed to Achievement-oriented situations. Achievement-projective scores also showed an increase from Relaxed to Achievement-oriented situations. Results were interpreted in terms of a dominant "fear of failure" set in the Relaxed situation and a dominant "hope for success" set in the Achievement-oriented situation. Similarly, Tureck and Howell (63) investigated success and failure situations and intensity of n Ach. They concluded that (a) when success preceded failure, the proportion of success acting alone did not influence intensity of n Ach., (b) when failure preceded success, n Ach score varied inversely with the proportion of success, and (c) when failures exceeded successes, greater n Ach was expressed when success followed failure than when failure followed success. A related study by Dani (16) investigated level of aspiration as a function on n Ach and fear of failure.

F-4

In a later study, Feather (19) found that a subject's expectation of success before task performance is positively related to n Ach in situations providing accomplishment opportunities. The finding that initial expectations were negatively related to test anxiety was interpreted by Feather in terms of the influence of past experience in related situations and may reflect the effect of subjective attractiveness of success and of repulsiveness of failure. A recent study by Moulton (47) found that subjects with a high fear of failure and a low n Ach raised their level of aspiration after failure and lowered it after success. In Moulton's study, instructions that were intended to reduce the degree of underestimation of the probability of success increased low levels of aspiration.

Studies dealing with student fear of failure and with student reaction to frustration and anxiety include those by Schroder and Hunt (53), Mahone (40,41), Lowe (38), and Amin (2). Schroder and Hunt tested hypotheses relative to failure-avoidance behavior in situational interpretation and errors in problem-solving situations. The subjects who made avoidant interpretations of failure and criticism (a) avoided failure in a problem-solving situation, (b) maintained their self-evaluation after criticism, (c) stated higher evaluations following a low "failing" score, and (d) over-evaluated their performance. In addition, the subjects who used failure-avoidant behavior in a problem-solving situation (a) set higher goals (b) used fewer alternative solutions in attempting to solve the problem, and (c) performed less effectively after failure. Schroder and Hunt emphasize the consideration of certain other personality variables of obvious importance (e.g., psychological need or motive) in further research. In addition, they contrast their theory of "failure-avoidance" with the "fear of failure" concept of Atkinson (5) and they recommend further investigation of these constructs. Mahone (40) found that realism of vocational aspirations is related to n Ach and to the assessment of one's capability. He contends that a student who fears failure tends to be unrealistic, rather than to aspire realistically and thus be forced to "prove himself."

Still other aspiration-level studies have investigated reactions to success and failure and the influence of ability on aspiration level. Lichtenberg (37), in his study on reactions to success and failure during individual and cooperative effort, found that a failure of early action in non-creative tasks "causes" more persons to lower their estimation of the probability of successfully completing their task when working alone than when working cooperatively. Gruen's (24) study of a new level of aspiration test found that responses to a verbal maze varied in the expected direction with the experience of success or failure. A more recent study by Lachman (36) showed how

systematic manipulation of length of task practice periods can
maximize the probability of success or failure. His results
indicated that aspirations rise with success, fall with failure,
remain close to performance level, and remain above rather than
below performance level. Research conducted by Mohr (44) con-
cerned ability tasks as a function of both level of ability and
motivation conditions, whereas Muthayya (48) found a lack of re-
lationship between achievement and aspiration level, intelligence
and aspiration level, and achievement and intelligence. Fruchter
(21) investigated ability patterns in technical training criteria
and pointed out possibilities in analyzing criteria as a method
for understanding the variance in technical training course grades
and other proficiency criteria.

The amount of psychological literature dealing with the
possible effects of socio-economic status, the family, place of
residence, and race upon student aspirations is considerable. In
a study of social class attitude and level of occupational choice
in school-leavers, Jahada (1953) found that lower social class
members over-rated aspiration level more than did other subjects.
Seidman (56) and Stefflre (58,59) studied intelligence, socio-
economic background, and student ambition, finding that duller
students from each social-economic group aspire downward, while the
brighter ones aspire upward. Similar findings by Empry (17)
indicate that, although the higher social classes have higher
aspirations, lower social-class students aspire more highly than
did their fathers. Still another study by Weiner and Murray (66)
supports Empry's conclusions by indicating that lower-class parents
now wish their children to attend college and, thus, to aspire more
highly than previously was the custom.

Closely related to socio-economic class are the factors of
family influence and place of residence. In their study of class
and family influences on aspiration level, Bennett and Gist (8)
reported that urban students showed little variation of aspirations
and plans among social classes, but that occupational plans varied
significantly with class. Urban versus rural place of residence
also proved relevant to student aspiration level, as is shown in
studies by Hodgkins and Parr (30), Haller (25,26), Haller and
Sewell (27), Moreland (45), and Grigg and Middleton (23). Hodgkins
and Parr, however, believe that socio-economic status bears more
relationship to aspiration level than do urban-rural differences.

Somewhat stronger emphasis on place of residence is given by
Haller (26), who writes that the lower educational aspiration levels
of farm-reared youth in the city stem from "farming" as a normal
part in the student's self-concept. He further indicates that rural

F-6

youth underestimate the importance of education in achieving occupations, and he points to the need for further hypothesis-testing in this area. The studies by Grigg and Middleton and by Moreland also considered both educational and occupational aspiration levels, stating that educational, rather than occupational, aspirations are lower for rural than for town or city students.

A few studies have attempted to relate this "place of residence" influence and race factors to aspirational level. Contrary to expectations, Holloway and Berreman (31) did not find a consistent tendency for the level of aspiration of elementary school pupils to be associated with social class, nor were there any significant differences between Negro and white pupils in aspirations when social class was held constant. In another study, Smith (58) investigated the personal and social adjustment of Negro children in rural and urban areas of the South and found no differences between the two groups as measured by the California Test of Personality.

Still another research concern in the realm of aspiration level has been that of attitudes and personality factors, including student expectation and needs. When questioned about vocational preferences and their reasons for these preferences, Hurlock and Jansing's (32) subjects indicated that scholastic achievement had little bearing on their vocational choice. Sewell, Marshall, Haller, and DeHart (57) found the variables of education, socio-economic status, ethnic group, sex, father's occupational status, size of farm, and age to be related to the attitudes of rural students toward school. Schutz and Blocher (54) also found level of occupational choice to reflect student attitude, or more specifically, various aspects of self-concept. A study by Ryan (51) investigated factors affecting realistic and unrealistic occupational choice and found such choices related to aspects of self, aspects of reality, and aspects of key persons (awareness of others).

Research connected with student personality factors, such as expectations and needs, has been conducted by Wren (69), Greig (22), Wilson (67), Stephenson (61), and Heath, Maier, and Remmers (28). Wren, Heath et al. found that workers aspire most for power, prestige, and income and that aspiration level is related to dominance, intelligence, educational status, family occupation, and income. The study by Greig emphasized the lack of useful knowledge that many (1/3) students possessed in regard to their preferred job and stressed implications of the results for social psychology and guidance. Although Stephenson's study indicates that occupational aspirations have little relationship to either family occupation or community needs, the study by Wilson (67) showed a fair correspondence between vocational choice and opportunity, with a large number of choices

in the skilled and semi-skilled job areas. However, as in earlier studies, occupational plans in the Stephenson study were somewhat more in line with community needs than were aspirations. Still other research in the area of student aspiration level has been conducted by Lurie (39), Stubbins (62), Walder (65), Arsenian and Laird (4), Kledzik (35), Winslow (68), Schwartz (55), and Cotter (15). However, this research seemed less relevant for the problem under consideration.

B. Interests

Psychological research concerning student interests that seems to have implications for vocational-technical education may be considered in terms of (a) the influence of interests on both vocational choice and school achievement and (b) the development and stability of interests. Bedford's (6) study of the vocational choices and interests of rural high school students indicates that vocational interests often bear no relation to available vocational opportunities and that subjects often lack knowledge of the training required for their chosen field. In this study, only a small percentage of students chose industrial or agricultural fields, while the professional areas were often chosen without apparent justification.

A study by Stefflre (59,60) emphasized level of interest as related to vocational aspiration level and concluded that this interest level furnishes a rough index of direction and extent of the student's aspiration as expressed through the selection of vocational objective. A study of Rubisoff (50) attempts to relate interest-values to occupational attitude and choice.

Several studies have been concerned with how interests influence school achievement. A study of interests and general educational development by Frandsen (20) upheld the hypothesis that interests correlate with achievement when achievement involves performance over time and found that interest factors are influential in course selections. Although Jackson (33) also found interests and course selection to be related, his findings did not support a significant relationship between interest and intelligence, vocational course success, or grade average. In investigating interest scores in predicting success in vocational school programs, Motto (46) found that the Kuder Preference Record did not differentiate successful from unsuccessful vocational school trainees, and Samuelson (52) found a significant but limited predictive value for Kuder Record items. Still another study, by Armstrong (3), investigated the interests and social adjustments of under-achievers and normal achievers at the secondary school level. Allen (1), Behrend (7), Valeriu (64), and Collins (14) have also stressed the influence of interests on achievement.

F-8

An article by Book (11) suggests that, to help a student develop interests, educators must (a) build new interests on old ones, (b) secure new information, (c) plan work so that students can succeed in order to (d) make the student exert himself fully and vigorously toward his task. Bondoreveskii (10) investigated the formation of vocational interests in high school pupils with vocational training. This study reports that academic and vocational interests are affected by the type of industrial training undertaken in work-study programs, by the organization of work in industrial settings, and by the influence of the teacher. Finally, McCoy (43) has investigated stability and change of measured vocational interests of high school students. Other research concerning interests relates more directly to the subject area of guidance and will be discussed in connection with that literature.

C. Summary

Inasmuch as the major purpose of this project is to stimulate psychological research focused on problems of vocational and technical education, we shall consider here the major implications of the studies previously described for teaching and research.

Student Characteristics

Level of aspiration. Studies dealing with the influence of the high school teacher upon student aspiration stress the educator as a model for student performance and appropriate goal-setting. This situation poses the potential research question of how teachers may best utilize their position to help students develop realistic and attainable goals and to reduce social pressures upon students by dignifying and respecting relatively low-level goals. In addition, valuable research might be conducted to ascertain what kinds of teachers provide effective models for the less academically oriented students.

Studies dealing with the effect of success and failure on performance emphasize the influence of the student's achievement motivation, fear of failure, and expectation upon aspiration level. These findings suggest that the teacher may maximize the probability of success and help the student to deal with success and failure situations by understanding the effect of achievement motivation and of student expectation on aspiration level, on school performance, and on vocational realism.

Research on social class and urban-rural differences in aspiration level indicate that socio-economic status bears more relationship to aspiration level than do urban-rural differences, although rural youth do seem to underestimate the importance of

education in attaining occupations toward which they aspire. The increased social mobility of today's youth and their relatively higher aspiration levels should impress the educator with his responsibility to help students set realistic and attainable goals and should also encourage research in this area.

Interests. Studies dealing with the relationship between interest and vocational choice indicate that vocational interests often bear no relation to available vocational opportunities and that students often lack knowledge of the training required for their chosen field. This situation, and the fact that only a minimal relationship seems to exist between interest and school success, should offer opportunities for research as to how teachers and guidance counselors may inform students about existing opportunities and as to how interest measures may be improved or developed to better predict vocational school success.

V. CONCLUSIONS AND IMPLICATIONS

Because this report covers only a portion of the total scope of the research to be surveyed, it is premature to draw general conclusions and implications. These will be appropriate when the entire project has been completed.

VI. SUMMARY

A survey of the literature concerning psychological research applicable to vocational and technical education has revealed a broad range of research studies, which have subsequently been organized into relevant areas. In this report, research studies concerning two areas of student characteristics-level of aspiration, and vocational interest--have been described and their implications for teaching and research in vocational and technical education have been discussed.

VII. REFERENCES

1. Allen, R.D. Creating right attitudes toward student achievement. <u>School and Society</u>, 1928, <u>27</u>, 521-527. May

2. Amin, D.C. Reactions to a frustrating situation--a study. <u>Journal Educational Psychology</u>, 1951, <u>9</u>, 94-98. (see <u>Psychological Abstracts</u> 1, June, 1952, <u>26</u>, p. 376.)

3. Armstrong, Marian E. A comparison of the interests and social adjustment of under-achievers and normal achievers at the secondary school level. <u>Dissertation Abstracts</u>, 1955, <u>15</u>, 1349. No. 8, August

4. Arsenian, S. & Laird, F.J. Graduate research and personnel work during a two-year period. <u>American Psychologist</u>, 1952, <u>7</u>, 189-191. No. 5, May

5. Atkinson, J.W. & Feather, N.T. (eds.). <u>A theory of achievement motivation</u>. New York: Wiley, 1966.

6. Bedford, J.H. A study of vocational interests of California high school students based on a survey of 12 rural high schools. <u>California Quarterly of Secondary Education</u>, 1929, <u>5</u>, 47-66. October

7. Behrend, F. The work school and work instruction. The student's interest. <u>Handb. d. Arbeitsunterricht</u>, 1931, no. <u>1</u>. (see <u>Psychological Abstracts</u> 5, Jan. 1933, <u>7</u>, p. 588)

8. Bennett, W.S. & Gist, N.P. Class and family influence on student aspirations. <u>Social Forces</u>, 1964, <u>43</u> (2), 167-173. Dec.

9. Bochow, R. Education and level of aspiration. <u>Prax. Kinderpsychol</u>, <u>Kinderpsychiat</u>. 1956, 7, 174-178. (see <u>Psychological Abstracts</u> 1, Oct., 1957, <u>31</u>, p. 750)

10. Bondorevskii, V.B. On the formation of professional and academic interests in secondary school pupils with vocational training. <u>Vop. Psikhol</u>., 1961, <u>7</u> (2), 23-28. (see <u>Psychological Abstracts</u> 1, April, 1962, <u>36</u>, p. 383)

11. Book, W.F. How to develop an interest in one's tasks and work. <u>Journal of Educational Psychology</u>, 1927, <u>18</u>, 1-10. No. 1, Jan.

12. Boyle, R.P. The effect of the high school on student's aspirations. <u>American Journal of Sociology</u>, 1966, <u>71</u>, (6), 628-639. May

13. Byers, J.J. A study of the level of aspiration of academically successful and unsuccessful high school students. <u>California Journal of Educational Research</u>, 1962, <u>13</u> (5), 209-216. (see <u>Pschological Abstracts</u>, Aug., 1963, <u>37</u>, p. 710)

14. Collins, C.C. The relationship of breadth of academic interest to academic achievement and academic aptitude. <u>Dissertation Abstracts</u>, 1955, <u>15</u>, 1782-1783. No. 10 Oct.

15. Cotter, Catherine C. Explorations and discourse on school failures. <u>Catholic Educational Review</u>, 1964, <u>61</u>, (3), 109-182. (see <u>Psychological Abstracts</u>, Dec., 1965, <u>39</u>, p. 1762)

16. Dani, S.K. Level of aspiration as a function of need for achievement and fear of failure. <u>Dissertation Abstracts</u>, 1964, <u>24</u> No. 10, 4303. April

17. Empry, L.T. Social class and occupational aspiration: a comparison of absolute and relative measurement. <u>American Sociological Review</u>, 1956, <u>21</u>, 703-709. Dec. No. 6

18. Feather, N.T. Level of aspiration and achievement imagery. <u>Australian Journal of Psychology</u>, 1958, Dec., <u>10</u>, 319-328.

19. Feather, N.T. The relationship of expectation of success to need achievement and test anxiety. <u>Journal of Personality and Social Psychology</u>, 1965, <u>1</u> (2), 118-126. Feb.

20. Frandsen, A. Interests and general educational development. <u>Journal of Applied Psychology</u>, 1947, <u>31</u>, 57-66. No. 1, Feb.

21. Fruchter, B. Ability patterns in technical training criteria. <u>Journal of Applied Psychology</u>, 1952, <u>36</u>, 381-384. Dec.

22. Greig, A.R. A study of job expectations and preferences of Form III students in Victorian Technical Schools. <u>Australian Journal of Psychology</u>, 1950, <u>2</u>, 80-89. June

23. Grigg, C.M. & Middleton, R. Community of orientation and occupational aspirations of ninth grade students. <u>Social Forces</u>, 1960, <u>38</u>, 303-308. No. 4, May

24. Gruen, A. A new level of aspiration test and an application of it. <u>Journal of General Psychology</u>, 1958, <u>59</u>, 73-77. July

25. Haller, A.O. Research problems on the occupational achievement levels of farm-reared people. <u>Rural Sociology</u>, 1958, <u>23</u>. 355-362. No. 4, Dec.

26. Haller, A.O.   The occupational achievement process of farm-
    reared youth in urban-industrial society. Rural Sociology,
    1960, 25, 321-333. No. 3, Sept.

27. Haller, A.O. & Sewell, W.H.   Farm residence and levels of
    educational and occupational aspiration. American Journal of
    Sociology, 1957, 62, 407-411. No. 4, Jan.

28. Heath, R.W., Maier, M.H., & Remmers, H.H.   What does youth want
    from education and jobs? Purdue Opinion Panels Report, 1957,
    16 (2), (no. 48), 10; 18a.p. Jan.

29. Hilgard, E.R.   Success in relation to level of aspiration.
    School and Society, 1942, 55, 423-428. April

30. Hodgkins, B.J. & Parr, A.   Educational and occupational
    aspirations among rural and urban male adolescents in Alberta.
    Alberta Journal of Educational Research, 1965, 11, (4),
    255-262. (see Psychological Abstracts, July, 1966, 40, p.
    762)

31. Holloway, R.G. & Berreman, J.V.   The educational and
    occupational aspirations and plans of Negro and White male
    elementary school students. Pacific Sociological Review,
    1959, 2, 56-60. (see Psychological Abstracts, June, 1962,
    36, p. 558.)

32. Hurlock, E.B. & Jansing, C.   The vocational attitudes of boys
    and girls of high school age. Journal of Genetic Psychology,
    1934, 44, 175-191. No. 1, March

33. Jackson, J.   A note on the crystallization of vocational interests.
    Journal of Social Psychology, 1947, 26, 125-130. Aug.

34. Jahada, G.   Social class attitude and levels of occupational
    aspiration in secondary modern school leavers. British
    Journal of Psychology, 1953, 44, 95-107. Part 2, May

35. Kledzik, U.J.   Guidance and Counseling Prax, Kinderpsychol,
    Kinderpsychiat. 1954, 3, 100-104. (see Psychological Abstracts,
    Feb., 1956, 30, p. 87)

36. Lachman, S.J.   Level of aspiration: a classroom demonstration
    of phenomen and principles. Journal of General Psychology,
    1961, 65, 357-363. Oct.

37. Lichtenberg, P.   Reactions to success and failure during individ-
    ual and cooperative effort. Journal of Social Psychology, 1957,
    Aug. 46, 31-34.

38. Lowe, A. Individual differences in reaction to failure; mode of coping with anxiety, and interference-proneness. <u>Dissertation Abstracts</u>, 1959, Oct., <u>20</u>; 1439-1440. No. 4

39. Lurie, W.A. Intra-indivdual and extra-individual factors influencing the levels of vocational aspiration and achievement. <u>Psychological Bulletin</u>, 1938, <u>35</u>, 662. No. 9, Nov.

40. Mahone, C.H. Fear of failure and unrealistic vocational aspiration. <u>Dissertation Abstracts</u>, 1959 June, <u>19</u>, 3368. No. 12

41. Mahone, C.H. Fear of failure and unrealistic vocational aspiration, <u>Journal of Abnormal and Social Psychology</u>, 1960 March, <u>60</u>, 253-261.

42. McClelland, D.C. <u>The achievement motive</u>. New York: Appleton-Century-Crofts, <u>1953</u>.

43. McCoy, R.A. Stability and change of measured vocational interests of high school students. <u>Dissertation Abstracts</u>, 1955, <u>15</u>, 85-86. No. 1, Jan.

44. Mohr, R.H. Performance on special ability tasks as a function of level of ability and motivating conditions. <u>Dissertation Abstracts</u>, 1952, <u>12</u>, 596-597. No. 5, No month given

45. Moreland, J.K. Educational and occupational aspirations of mill and town school children in a southern community. <u>Social Forces</u>, 1960, <u>39</u>, 169-175. March

46. Motto, J.J. Interest scores in predicting success in vocational school programs. <u>Personnel and Guidance Journal</u>, 1959, <u>37</u>, 674-676. May

47. Moulton, R.W. Effects of success and failure on level of aspiration as related to achievement motives. <u>Journal of personality and Social Psychology</u>, 1965, <u>1</u>, 5, 399-406. May

48. Muthayya, B.C. Level of aspiration and intelligence of high achievers and low achievers in the scholastic field. <u>Journal of Psychological Research</u>, 1962, <u>6</u>, 146-149. (see <u>Psychological Abstracts</u>, Oct., 1964, <u>38</u>, p. 999.

49. Rosenfeld, H. & Zander A. The influence of teachers on aspirations of students. <u>Journal Educational Psychology</u>, 1961, <u>52</u>, 1-11. No. 7 Feb.

50. Rubisoff, R. Interest-values in relation to occupational
    attitudes and vocational choice. Psychological Bulletin,
    1942, 39, 436-437. No. 7, July

51. Ryan, J.F. A study of certain factors affecting realistic
    and unrealistic choice of an occupation. Dissertation
    Abstracts, 1954, 14, 619-620. No. 4, April

52. Samuelson, C.O. Interest scores in predicting success of trade
    school students. Personnel and Guidance Journal, 1958, 36,
    538-541. April

53. Schroder, H.M. & Hunt, D.E. Failure-avoidance in situational
    interpretation and problem solving. Psychological Monographs,
    1957, 71, (3), (no. 432). No month given

54. Schutz, R.A. & Blocher D.H. Self-satisfaction and level of
    occupational choice. Personnel Guidance Journal, 1961,
    39, 595-598. March

55. Schwartz, L.J. The effect of social evaluation and success
    and failure on the attractiveness of activities. Dissertation
    Abstracts, 1959 Oct., 20, 1442. No. 4

56. Seidman, J.M. An investigation of the relationship between
    aspirations, expectations, and socio-economic background
    of male high school juniors and seniors. Dissertation
    Abstracts, 1954, 14, 391-392, No. 2, Feb.

57. Sewell, W.H., Marshall, D.G., Haller, A.O., & DeHart, W.A.
    Factors associated with attitude toward high-school education
    in rural Wisconsin. Rural Sociology, 1953, 18, 359-365. No. 4
    Dec.

58. Smith, P.M., Jr., Personal and social adjustment of Negro
    children in rural and urban areas of the south. Rural
    Sociology, 1961, 26, 73-77. No. 1, March

59. Stefflre, B. Psychological factors associated with aspirations
    for socio-economic mobility. California Journal of Educational
    Research, 1955, 6, 55-60. (a) (see Psychological Abstracts,
    Dec., 1955, 29, p. 834)

60. Stefflre, B. Vocational aspiration and level of interest scores
    on the Lee Thorpe Occupational Interest Inventory. Personnel
    and Guidance Journal, 1955, 33, 385-388. (b) March

61. Stephenson, R.M. Occupational aspirations and plans of 443 ninth
    graders. Journal of Educational Research, 1955, 49, 27-35.
    No. 1 June

62. Stubbins, J. Vocational Aspirations. American Psychologist,
    1949, 4, 295. No. 7, July

63. Tureck, Eileen V, & Howell, R.J. The effect of variable
    success and failure situations on the intensity of need for
    achievement. Journal Social Psychology, 1959, May 49,
    267-273.

64. Valeriu, A. The problem of interests in contemporary pedagogy.
    Review Pedagogical, 1937, 7, 182-197. (see Psychological
    Abstracts, July, 1937, 7, p. 676.)

65. Walder, L.O. The effects of instructions, order, and sex-
    ethnic group in level of aspiration situations. Dissertation,
    1951, U. Hawaii. (see Psychological Abstracts, March, 1952,
    26, p. 192

66. Weiner, M. & Murray, W. Another look at the culturally deprived
    and their levels of aspiration, Journal of Educational
    Sociology, 1963, 36 (7), 319-321. March

67. Wilson, Mary D. The vocational preferences of secondary modern
    school children: Part I. British Journal of Educational
    Psychology, 1953, 23, 97-113. Part 2, June

68. Winslow, J.T. An intensive evaluation of the services of a
    high school guidance program. Dissertation Abstracts, 1955,
    15, 212-213. No. 2, Feb.

69. Wren, H.A. The drives of workers. Personnel Journal, 1942, 20,
    317-323. No. 9, March

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON 25, D.C.

ERIC DOCUMENT RESUME

DATE OF RESUME

1. ACCESSION NO.	2. ERIC SATELLITE CODE	3. CLEARING HOUSE CONTROL NO.

FOR INTERNAL ERIC USE ONLY
(Do Not Write In Space Below)

4. SOURCE

Iowa State University
Ames, Iowa   50010

DATE RECEIVED

IS MICROFILM COPY AVAILABLE? *(Check one)*
☐ Yes   ☐ No

5. TITLE The Potential Contribution of Psychology to Inter-
disciplinary Research in Vocational-Technical Education
(refer to field #12) Project 6, Final Report (7/65-11/66)

IS DOCUMENT COPYRIGHTED? *(Check one)*
☐ Yes   ☐ No

HAS COPYRIGHT RELEASE BEEN GRANTED?
(Check one)
☐ Yes   ☐ No

6. AUTHOR(S) Lewis, Edwin C., Heiserman, Mary

DATE, NAME, AND COMPLETE ADDRESS OF
AUTHORITY
TYPE OF RELEASE

7. DATE 11/21/66   8. PAGINATION 17 p.   9. REFERENCES 69

10. REPORT/SERIES NO. Project 6

11. CONTRACT NO. O.E. 5-85-108

12. PUBLICATION TITLE Appendix of Final Research Reports for
Project in Research & Development in Vocational & Tech-
nical Education: Non-metropolitan Areas.

13. EDITOR(S) N.A.

14. PUBLISHER Iowa State University, Ames, Iowa   50010

15. ABSTRACT *(250 words max.)*

The purpose of this study is to survey the literature concerning psychological contributions to educational research, with particular reference to those studies which have implications for vocational and technical education. On the basis of this survey, the investigators intend to delineate those areas in which further knowledge is needed and recommend ways in which psychologists can make important contributions to vocational and technical education. The phase of the project reported here is concerned primarily with the psychological variables of level of aspiration and student interest as influences on educational goals and achievement.

16. RETRIEVAL TERMS *(Continue on reverse)*

17. IDENTIFIERS

INSTRUCTIONS FOR COMPLETING ERIC DOCUMENT RESUME

The resume is to be used for storing summary data and information about each document acquired, processed, and stored within the ERIC system. In addition to serving as a permanent record of each document in the collection, the resume is also the primary means of dissemination. The upper left corner of the form (fields 1-14) is designed to conform to descriptive cataloging standards set forth by the Committee on Scientific and Technical Information (COSATI). Read the following instructions and complete the resume as directed.

A. GENERAL INSTRUCTIONS:

1. Read each entry point. If any point is not applicable, place "N.A." in the appropriate field. Except for those which you are instructed to leave blank, all fields must be completed with either the required information or "N.A."

2. Enter date of completion of the resume in space provided in upper right corner.

3. Entry must fit into space provided; if necessary use standardized abbreviation as cited by the American Psychological Association Publication Manual. (Publication Manual may be obtained from the American Psychological Association, Order Department, 1200 17th Street, NW., Washington, D.C. 20036.)

B. SPECIFIC INSTRUCTIONS:

Field 1. Accession No.: Leave blank. A permanent ED number will be assigned to each report and attendant documentation records as they are processed in the ERIC system.

Field 2. ERIC Satellite Code: Enter 3-digit code number assigned by ERIC to clearinghouse operation. If no code has been assigned, leave blank.

Field 3. Clearinghouse Control No.: If you are acting as a clearinghouse, enter the identifying number you have assigned to the document.

Field 4. Source: Enter corporate author, corporate source, or institutional affiliation of the author who originated the document. Include complete name and complete address of source, where possible. The Atomic Energy Commission Corporate Author, Entries, TID-5059 (6th Rev.) will be the authority for corporate source citations. (AEC Corporate Author Entries may be obtained from Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U.S. Department of Commerce, Springfield, Virginia.)

Field 5. Title: Enter full document title. If document comprises only a portion of the total publication or release, refer to field #12. Include subtitles if they add significantly to information in the title proper.

Enter volume numbers or part numbers, where applicable, as an added entry following the title.

If the document has been identified with a project number, enter the project number as an added entry following the volume or part numbers.

Include the type of report (whether proposal, in-progress, final, follow-up) as an added entry following the project number, where applicable. Following the type of report, enter the inclusive dates covered by the report, by month and year. (Example: 1/63 - 7/65.)

Field 6. Author(s): Enter personal author(s) (corporate author is entered in field #1), last name first. (Example: Doe, John.)

If two authors are given, enter both. In the case of three or more authors, list only the principal author followed by "and others," or, if no principal author has been designated, the first author given followed by "and others." (Example: Doe, John and others.)

Field 7. Date: Enter date of release of document by month and year. (Example: 12/65.)

Field 8. Pagination: Enter total number of pages of document, including illustrations, appendices, etc. (Example: 115 p.)

Field 9. References: Enter number of references cited in the bibliography of the document. (Example: 106 ref.)

Field 10. Report/Series No.: Enter any unique number assigned to the document by the publisher or corporate source. (Example: OE-53015; LX-135.) Do not enter project numbers; these are added entries field #5.

Also enter journal citations by name of journal, volume number, and pagination. (Example: NAEB Journal, v. II, pp. 52-73.) Do not include date; date is entered in field #7.

Field 11. Contract No.: If document has been supported by the U.S. Office of Education, enter the OE contract number.

Field 12. Publication Title: If document abstracted comprises only a portion of the total publication or release, enter complete title of publication. (Examples: Four Case Studies of Programmed Instruction; The Automation of School Information Systems.) For journal titles, spell out any abbreviations. (Example: National Association of Educational Broadcasters Journal.)

Field 13. Editor(s): Enter editor(s) last name first. (Example: Doe, Mary.) If two editors are given, enter both. In the case of three or more editors, list only the principal editor followed by "and others," or, if no principal editor has been designated, the first editor given followed by "and others." (Example: Doe, Mary and others.)

Field 14. Publisher: Enter name and location (city and state of publisher. (Example: McGraw-Hill, New York, New York.)

Field 15. Abstract: Enter abstract of document, with a maximum of 250 words.

Field 16. Retrieval Terms: Enter conceptually structurable terms which, taken as a group, adequately describe the content of the document. If terms do not fit into space provided on recto, use space allotted on verso for additional terms.

Codes: Leave blank. Codes will be assigned for internal retrieval purposes.

Field 17. Identifiers: Enter all terms which would not fit into a structured vocabulary. Examples are: trade names, equipment model names and numbers, organizations, project names (Project Headstart, Project English), code names, code numbers.

16. RETRIEVAL TERMS (Continued)

GPO 908-451